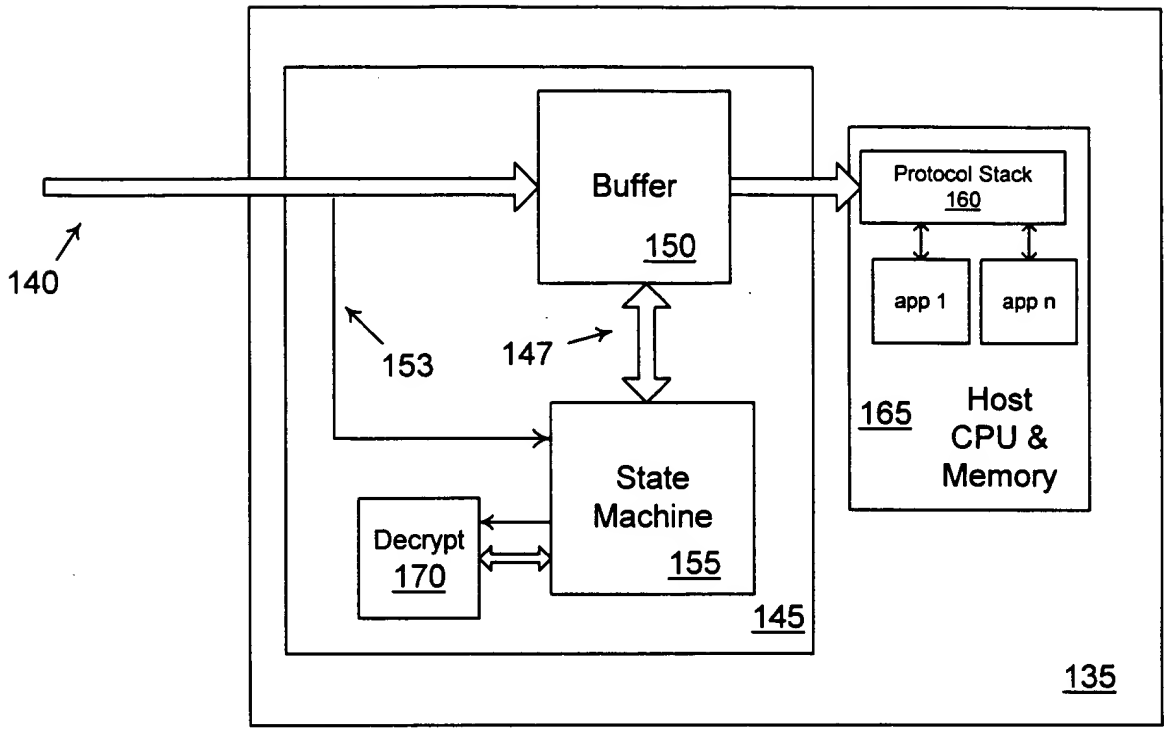
140
Buffer
150
153
147
Protocol Stack
160
app 1
app n
165
Host
CPU &
Memory
State
Machine
155
Decrypt
170
145
135

Fig. 1A

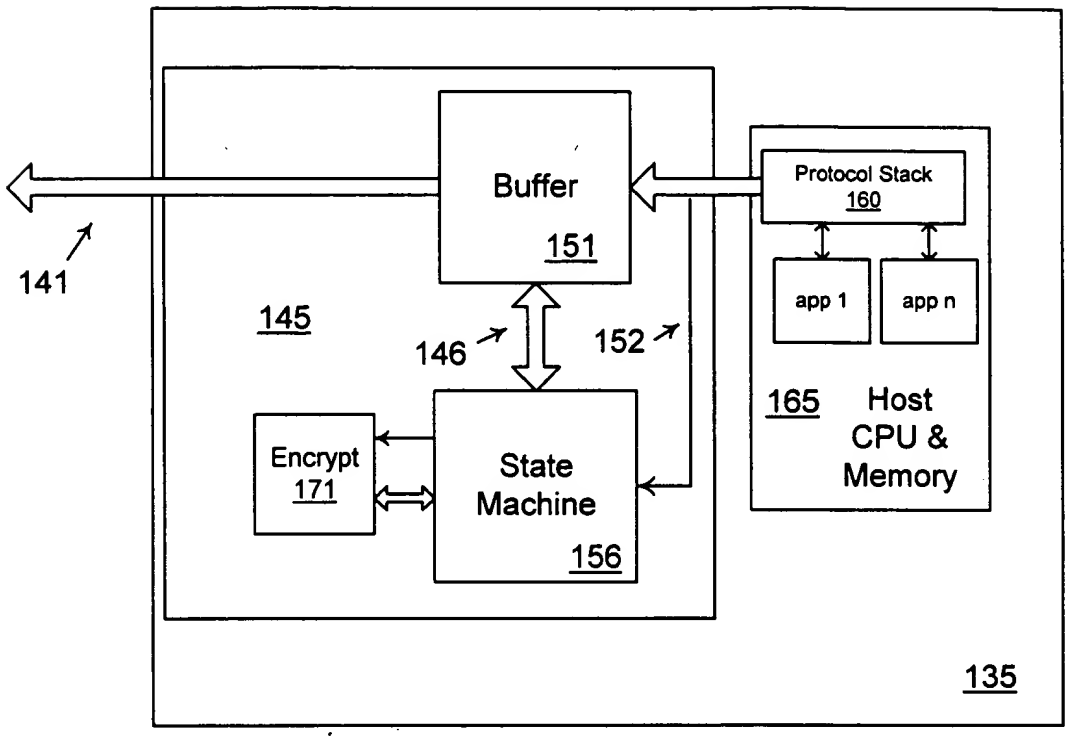
Buffer
151
Protocol Stack
160
app 1
app n
141
145
146
152
165
Host
CPU &
Memory
Encrypt
171
State
Machine
156
135

Fig. 1B

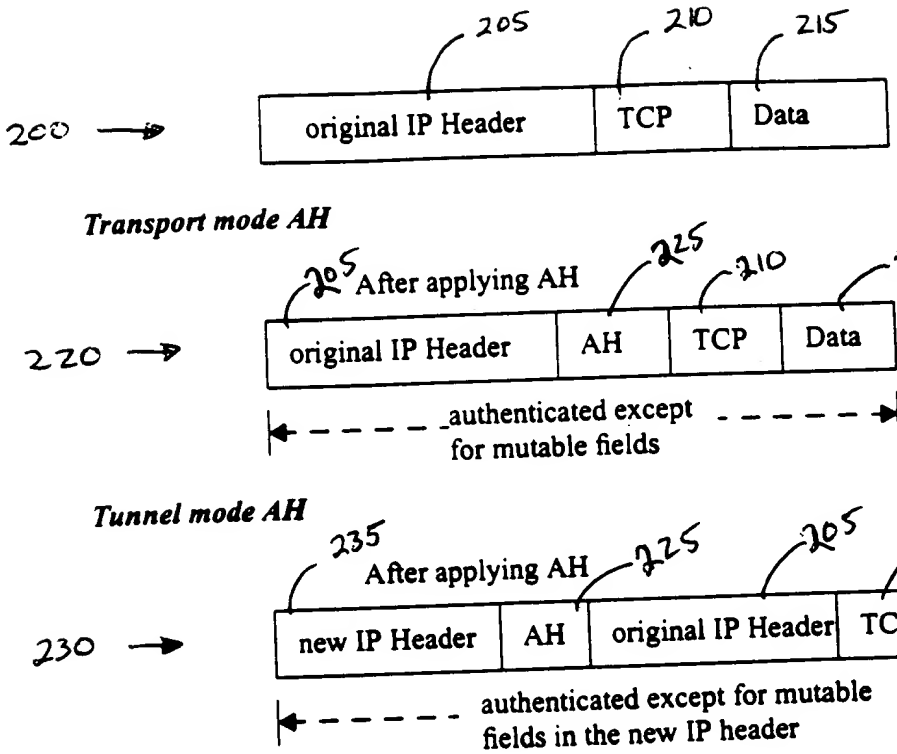
205
210
215
200
original IP Header
TCP
Data
Transport mode AH
205
After applying AH
225
210
215
220
original IP Header
AH
TCP
Data
authenticated except
for mutable fields
Tunnel mode AH
235
After applying AH
225
205
210
215
230
new IP Header
AH
original IP Header
TCP
Data
authenticated except for mutable
fields in the new IP header

FIG. 2A

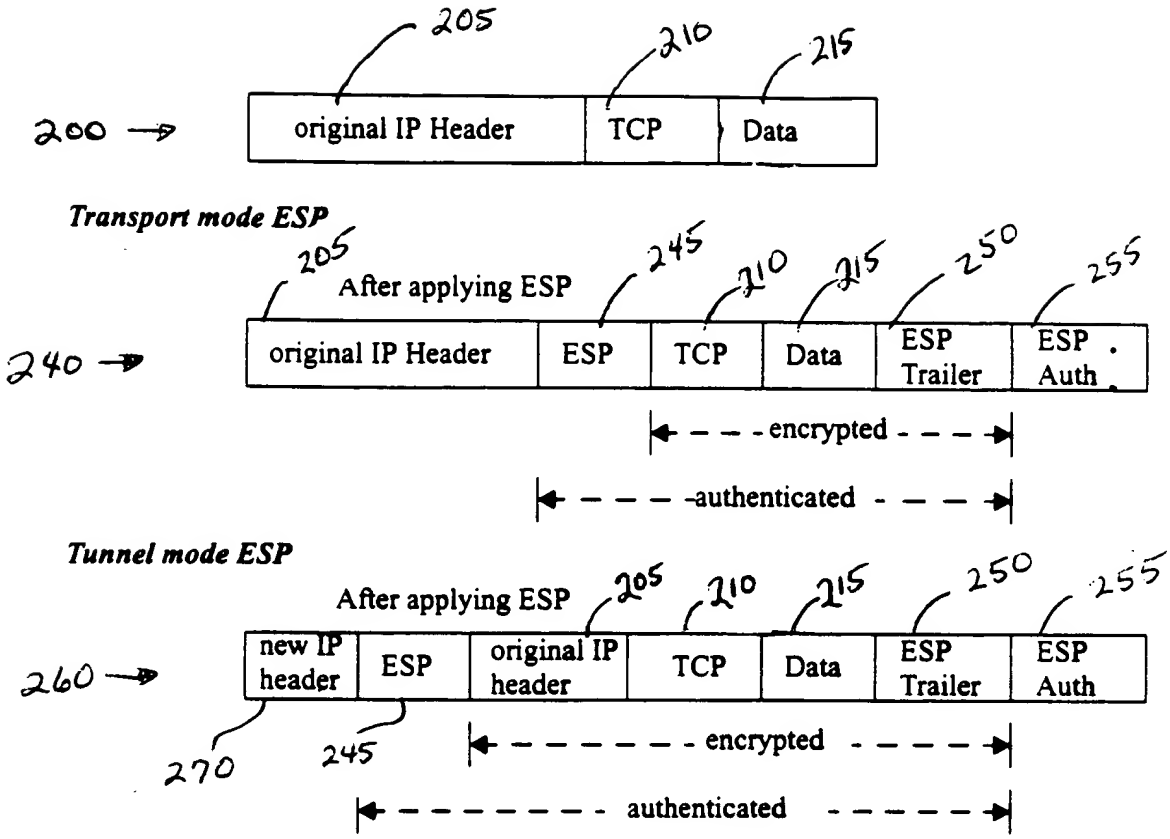
205
210
215
200
original IP Header
TCP
Data
Transport mode ESP
205
After applying ESP
245
210
215
250
255
240
original IP Header
ESP
TCP
Data
ESP Trailer
ESP Auth
encrypted
authenticated
Tunnel mode ESP
After applying ESP
205
210
215
250
255
260
new IP header
ESP
original IP header
TCP
Data
ESP Trailer
ESP Auth
270
245
encrypted
authenticated

FIG. 2B

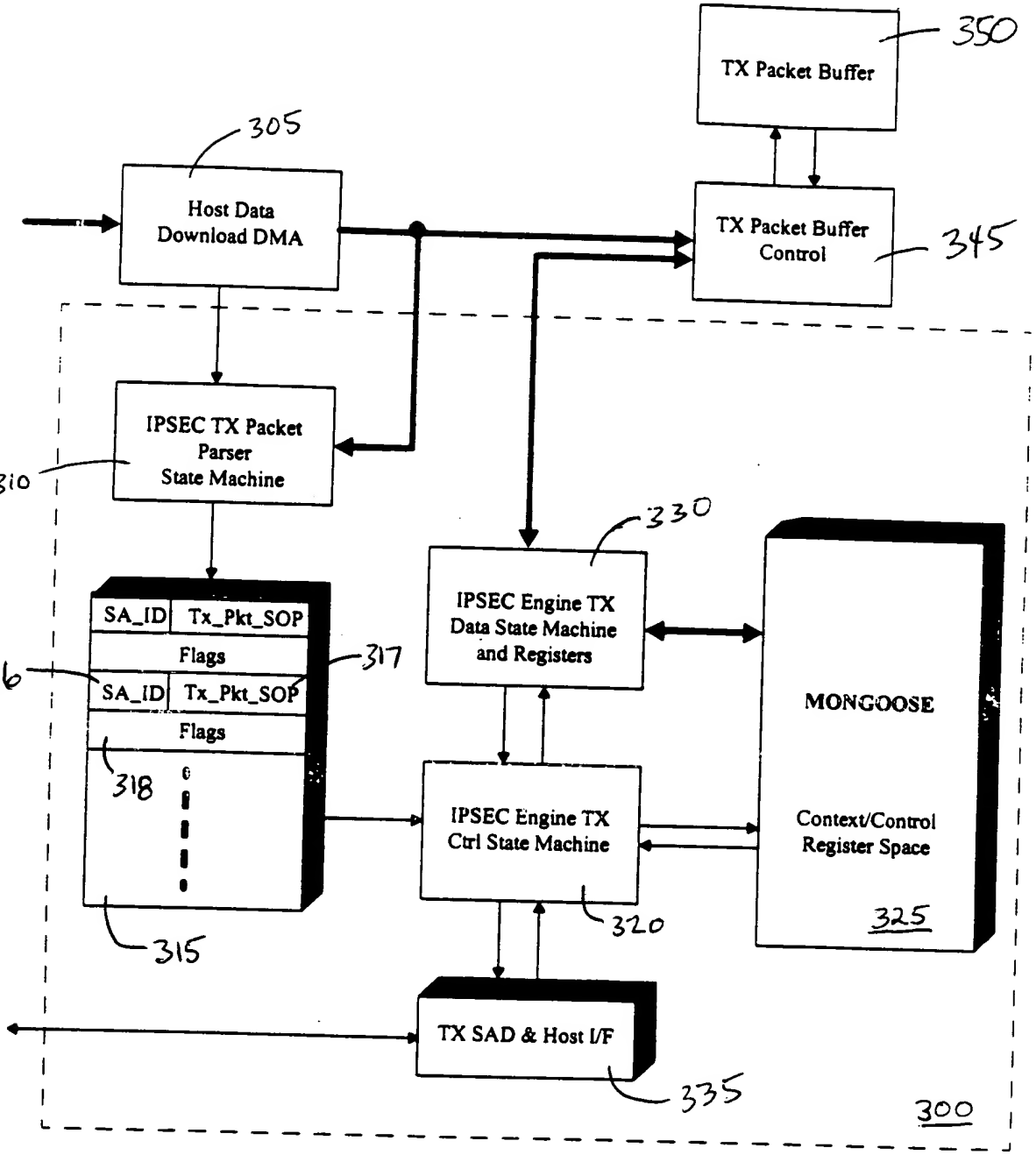

Figure 3 Hardware architecture for outbound traffics

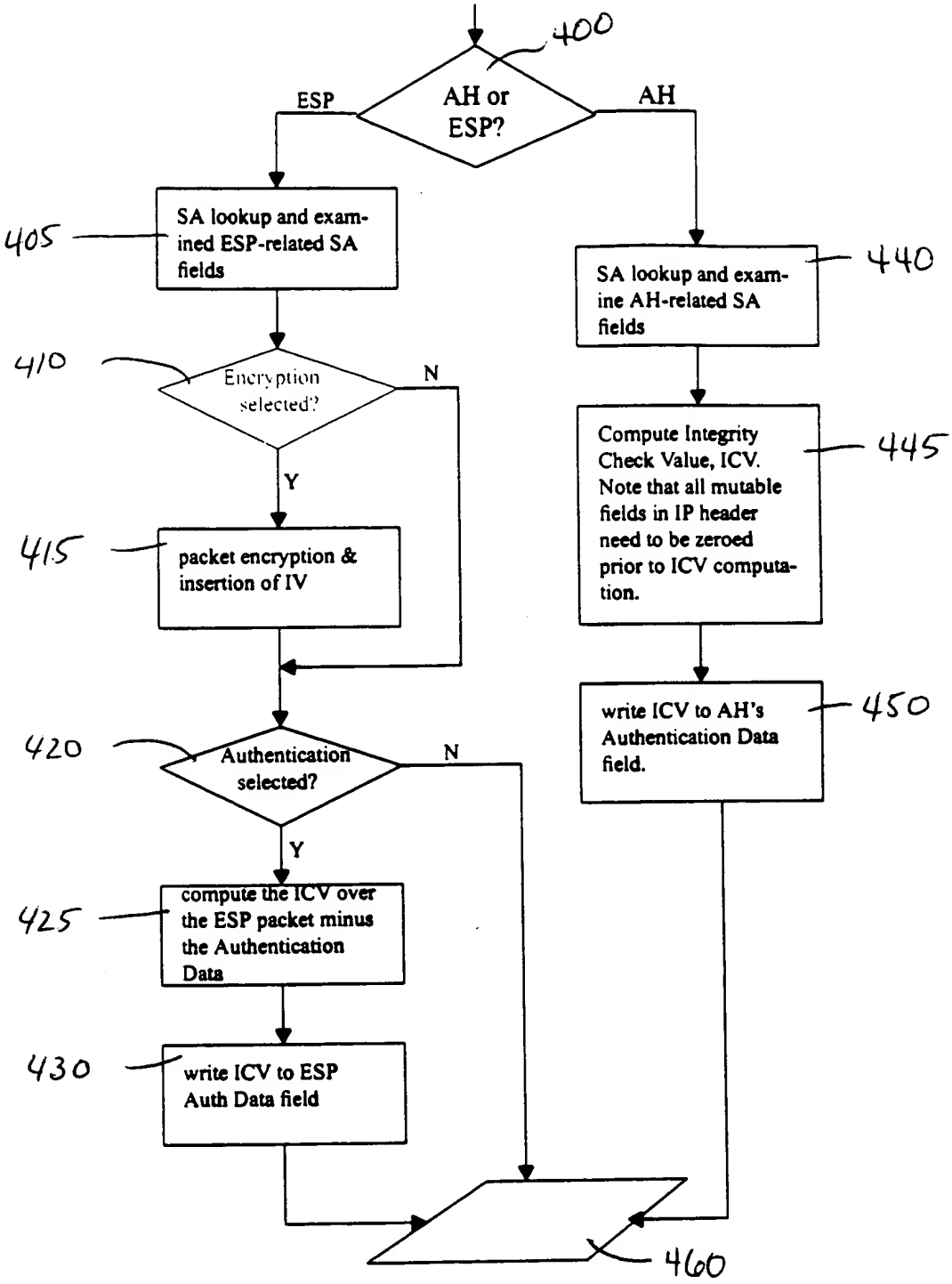

Figure 4. Outbound IP Traffic Processing Flow

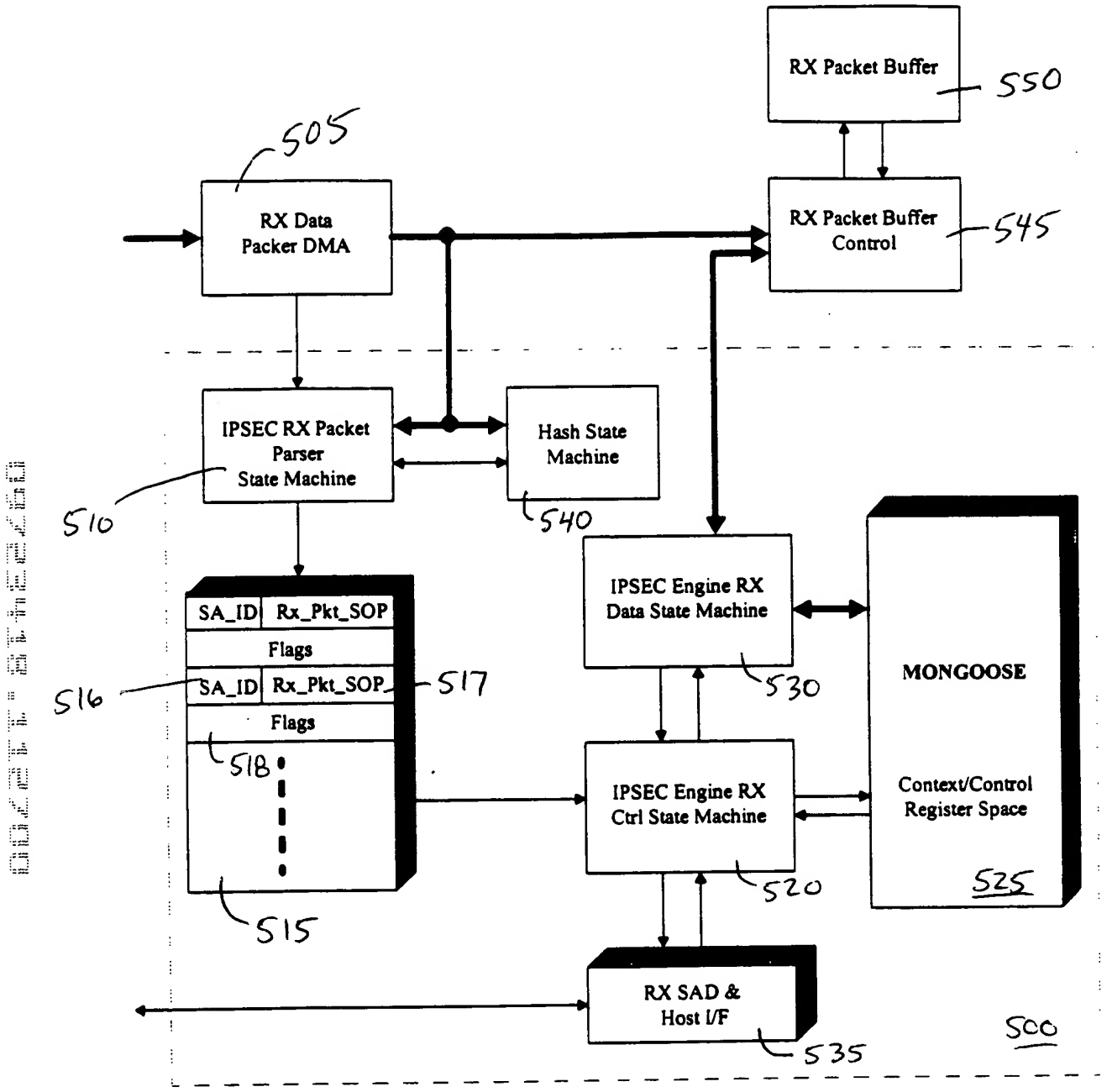

Figure 5 Hardware architecture for inbound traffics

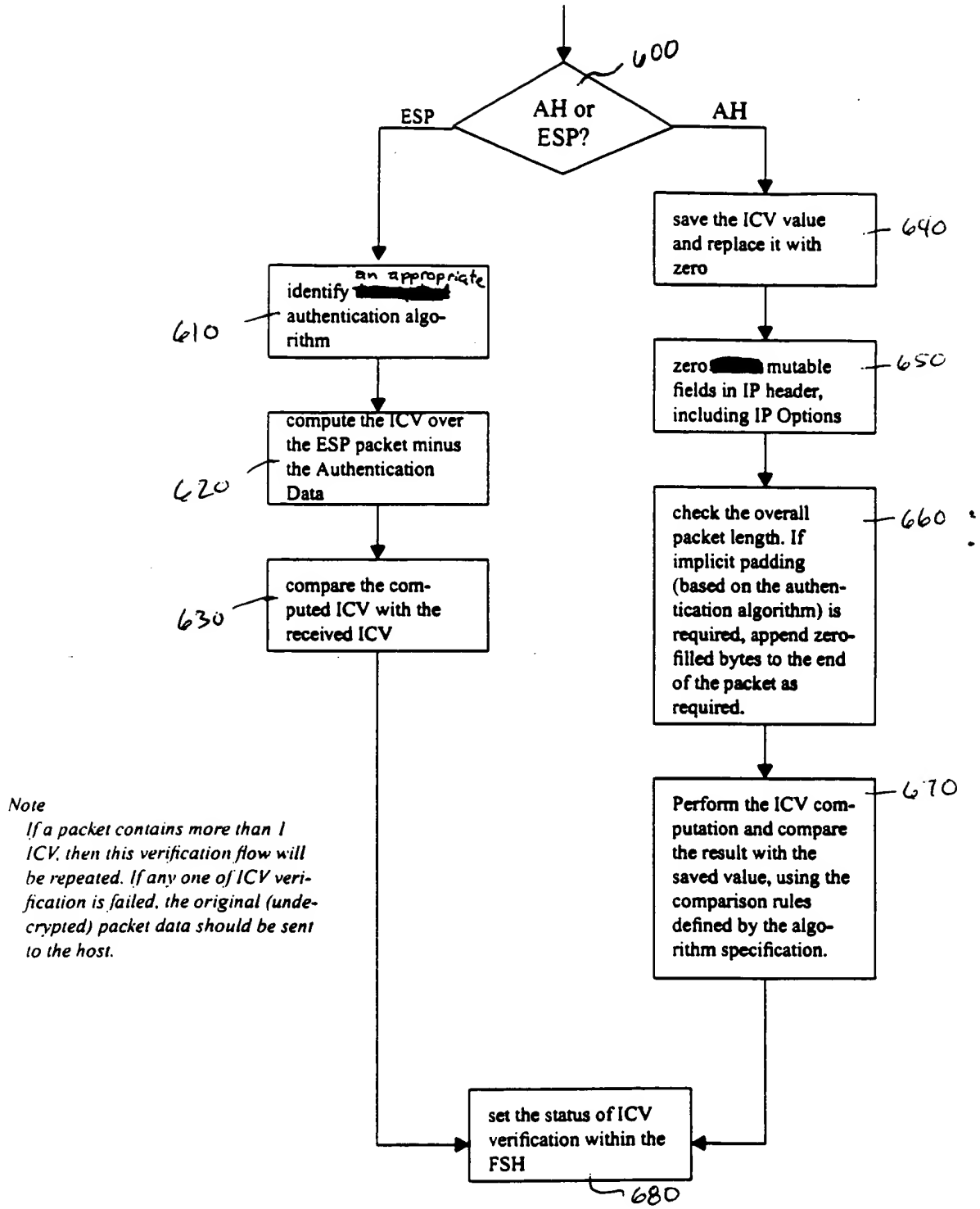

Figure 6. ICV verification for inbound traffic